NIMA Address to the
Executive Forum on Modeling & Simulation

Mr I.P. Buck
Associate Deputy Director -
Plans & Customer Operations
NIMA

REPORT DOCUMENTATION PAGE		Form Approved OMB No. 0704-0188

1. REPORT DATE (DD-MM-YYYY) 01-05-2002	2. REPORT TYPE Briefing	3. DATES COVERED (FROM - TO) xx-xx-2002 to xx-xx-2002

4. TITLE AND SUBTITLE
NIMA Address to the Executive Forum on Modeling & Simulation
Unclassified

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)
Buck, I. P. ;

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME AND ADDRESS
NIMA
xxxxx, xxxxxxx

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME AND ADDRESS
United States Department of Defense
Defense Modeling and Simulation Office
1901 N. Beauregard Street, Suite 500
Alexandria, VA22311-1705

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
APUBLIC RELEASE
,

13. SUPPLEMENTARY NOTES

14. ABSTRACT
NIMA Mission: To provide timely, relevant, and accurate imagery, imagery intelligence, and geospatial information in support of the national security objectives of the United States.

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Public Release	18. NUMBER OF PAGES 15	19. NAME OF RESPONSIBLE PERSON Fenster, Lynn lfenster@dtic.mil
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			19b. TELEPHONE NUMBER International Area Code Area Code Telephone Number 703767-9007 DSN 427-9007

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39.18

NIMA Mission

To provide timely, relevant, and accurate imagery, imagery intelligence, and geospatial information in support of the national security objectives of the United States.

NIMA Standup
1 October 1996

Incorporated entirely . . .

- **Defense Mapping Agency**
- **Central Imagery Office**
- **Defense Dissemination Program Office**
- **National Photographic Interpretation Center**

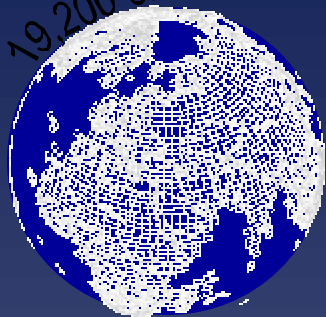**Incorporated imagery program elements of . . .**

- **Defense Airborne Reconnaissance Office**
- **National Reconnaissance Office**
- **Defense Intelligence Agency**
- **Central Intelligence Agency**

Foundation-based Operations
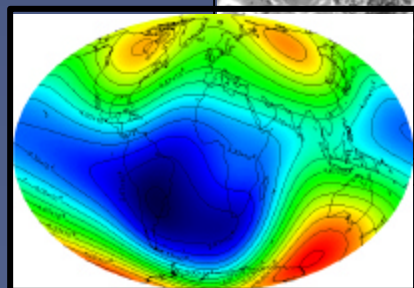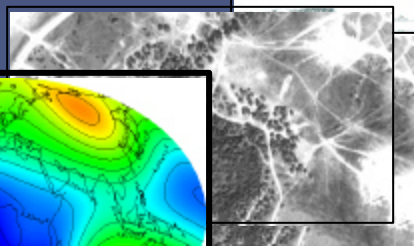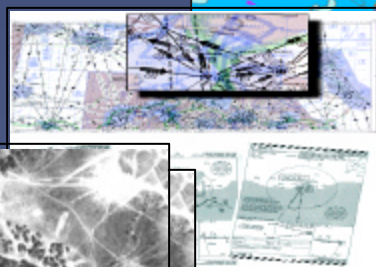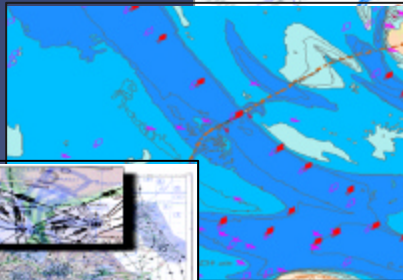## The Near Global Framework for Readiness

19,200 cells

Elevation (Shuttle Mission)

5M Controlled Imagery

**Foundation Feature Data /
VMAP1 in areas of no FFD**
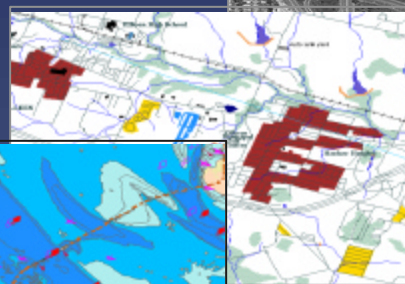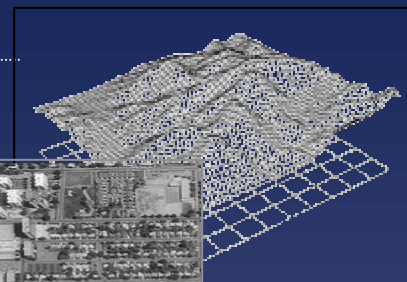
Hydrographic Safety of Navigation

Aeronautical Safety of Navigation

Digital Point Positioning Database

Geodesy & Geophysics

Note: Many NIMA products
are LIMDIS or Classified

Mission Specific Data Set (MSDS)

- Imagery, elevation, and/or feature data at an increased level of accuracy, attribution, and density
- Provides a common framework for interoperability - UCDM
- Built upon Foundation Data
- Content driven
- Focused on specific objective areas
- Based on customer defined missions and intended uses
- Types of MSDS are:
  - Standard
  - Tailored
- Independent of format
- Supports value-adding

Foundation Feature Data (FFD)

MSDS

Note: Many NIMA products are LIMDIS or Classified
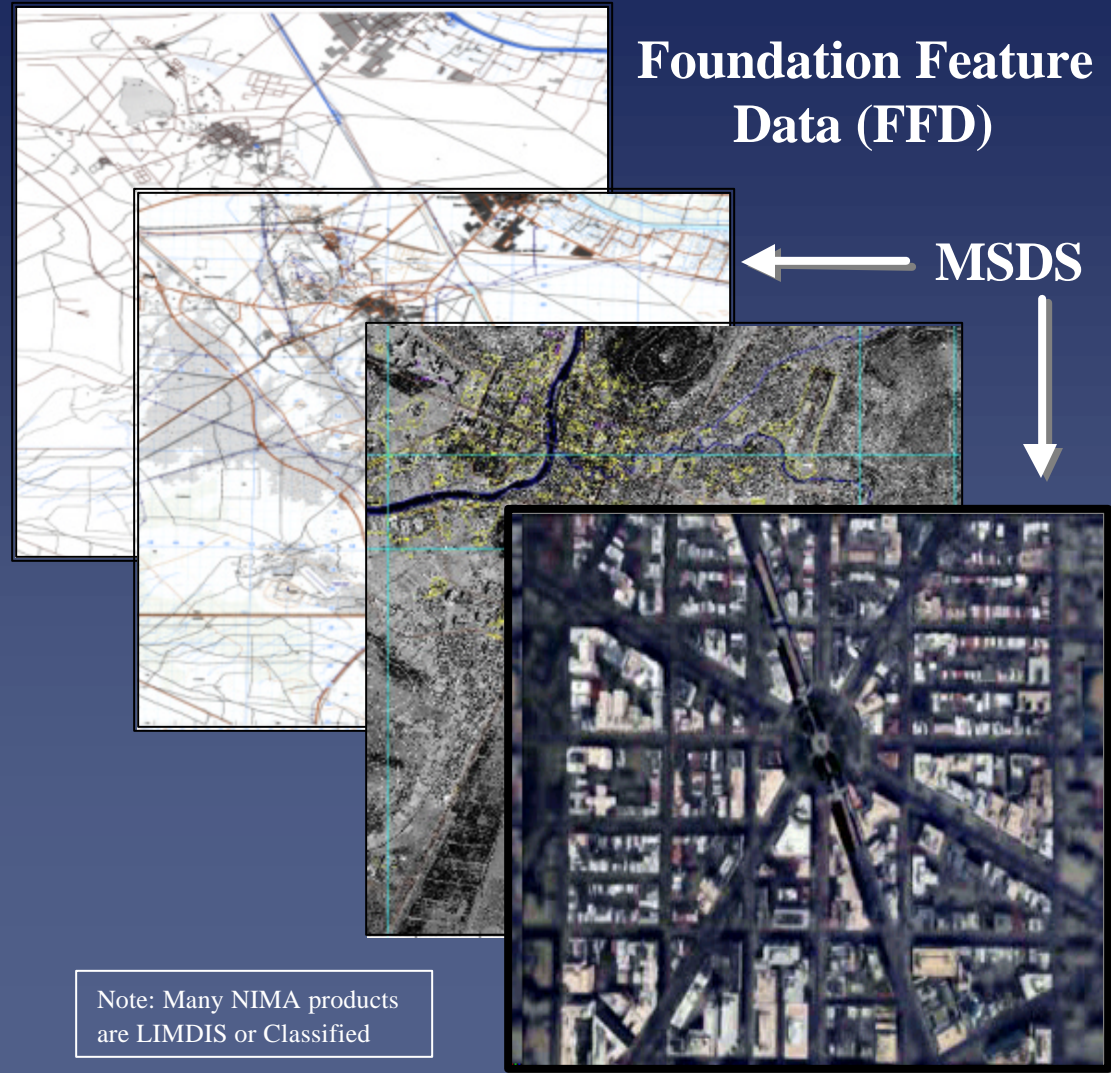
Shuttle Radar Topographic Mission (SRTM)

- SRTM is a joint NIMA/NASA Space Shuttle Mission to collect terrain height information at 1 arc sec density from 60^0N to 57^0S (80% of earth's landmass; 14400 1^0 cells)

- SRTM mission complete 11-22 Feb 2000, resulted in 99.98% data acquisition

- Incremental data finishing from December 2001 to April 2003

- NIMA processing of terrain height data to DTED2 format according to CINC/Service priorities
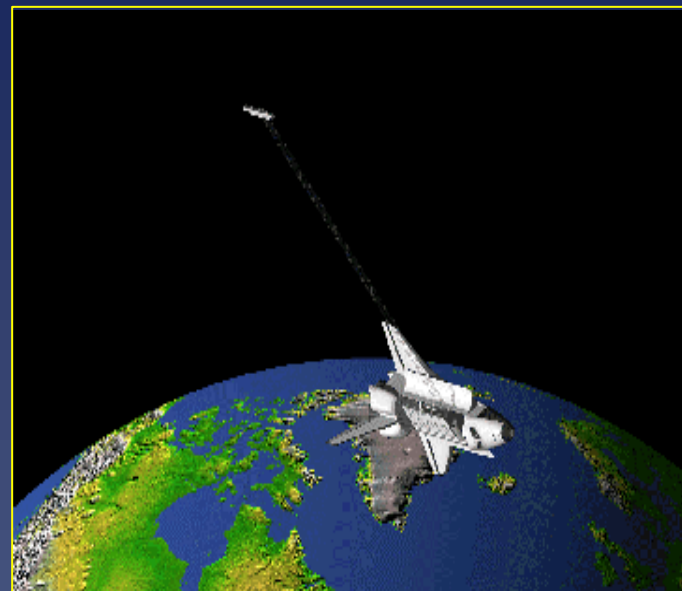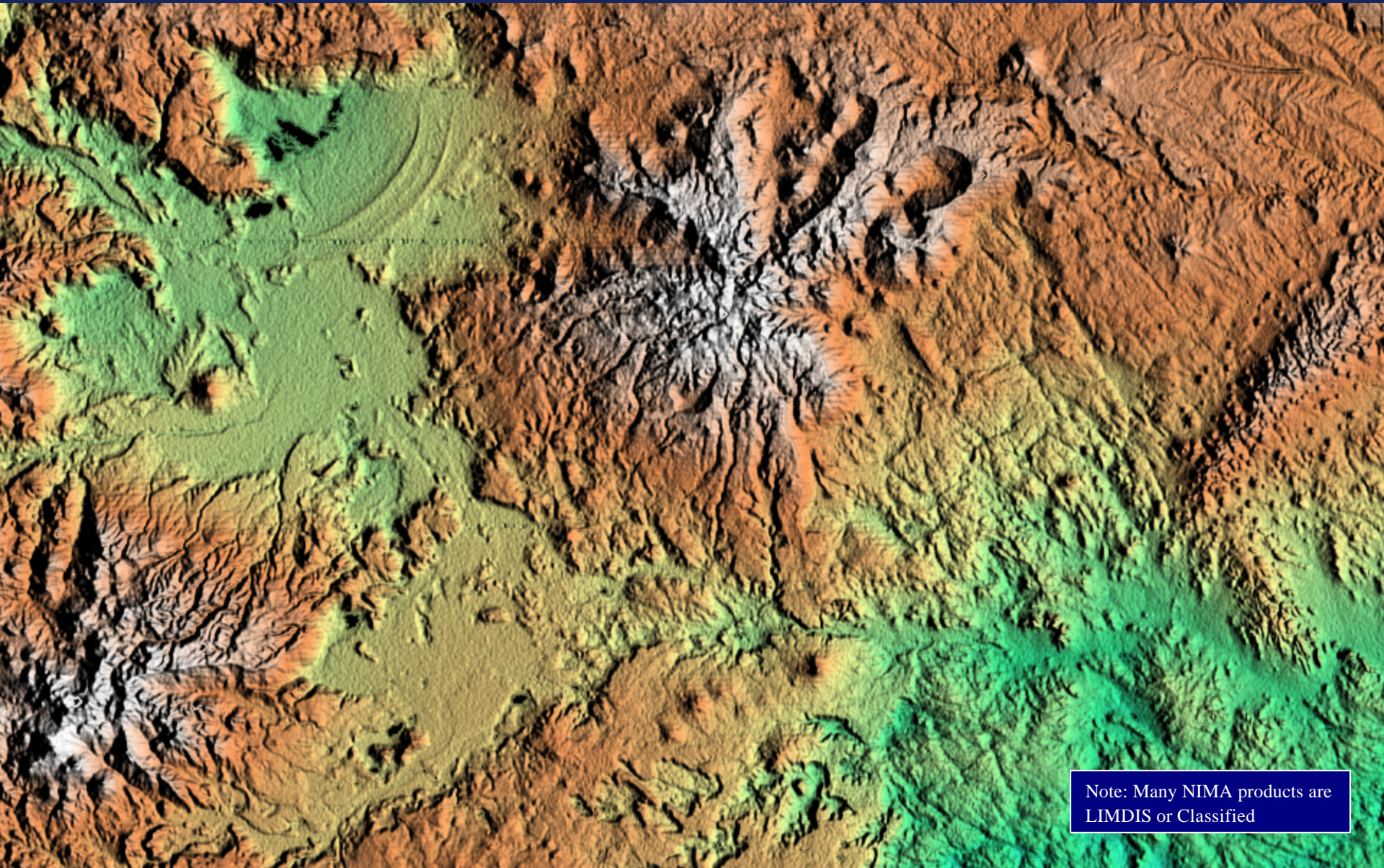
SRTM Collection Overview

- *Extremely successful collection by the Shuttle (~119 million km2)*
- *80% of the Earth's land mass imaged between 60N and 54S (Southern Alaska to Tierra del Fuego)*
- *99.96% imaged once and 94.59% imaged twice*
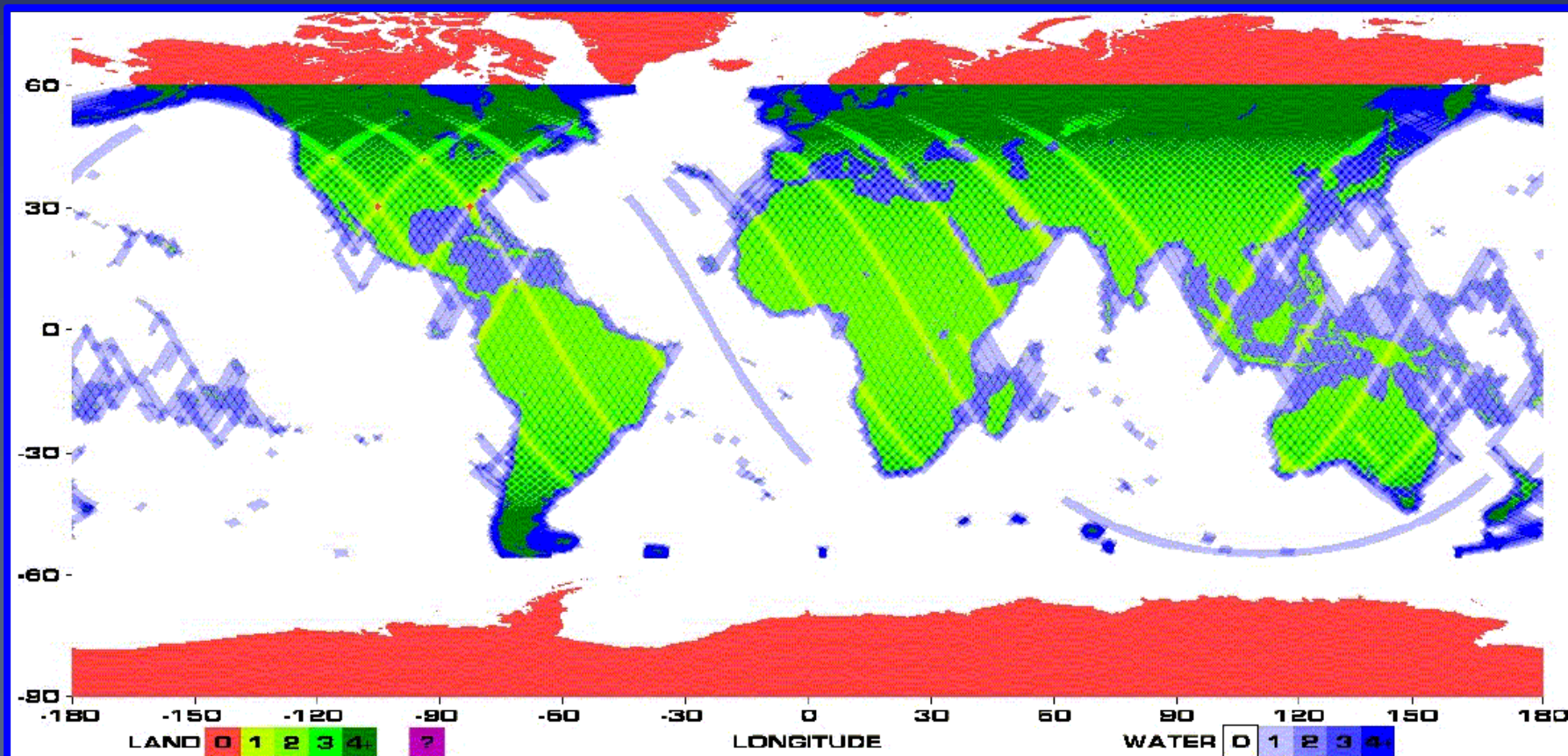
Shaded relief map of Patagonia, Argentina from SRTM data, 20 Feb 00

Note: Many NIMA products are LIMDIS or Classified

NIMA GI3 IPT

- Director of NIMA authorized the establishment of the Geospatial Information Infrastructure Implementation Integrated Product Team (GI3IPT), which began on 7 Aug 2000 and will run until June 2001.

- The team is focusing the attention of the community on the geospatial domain of the USIGS within the FY 2001-2010 timeframe with a view toward achieving the tenets of the DCI's Statement of Strategic Intent and JV2020.

- The team aims to deliver the final USIGS Geospatial Transition Plan in June 2001

Army Environmental Database IPT

- D/NIMA is a signatory of the OIPT Charter

- Army participation with the NIMA GI3 IPT has been productive
  - Mid Level Leadership at NIMA has agreed to include expanding the UCDM to accommodate all Army requirements for Geospatial Information required to support future M&S and C4I systems

- Army is finalizing the requirements documents for TCDM as a standard MSDS

NIMA as an M&S data producer

- Currently M&S data sets are not part of standard NIMA production

  - Low priority compared to CINC requirements
  - NIMA data is often LIMDIS or classified

- NIMA Foundation Data and current Mission Specific Data Sets are designed for C4I systems not specifically for M&S systems

  - Army's adoption of TCDM as an MSDS requirement will help

NIMA as an M&S data producer

- NIMA production to support M&S has been in the form of custom data sets for individual activities
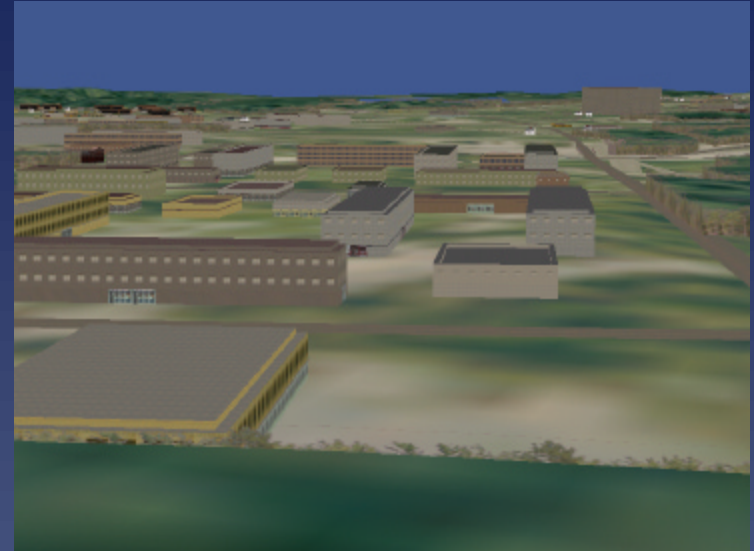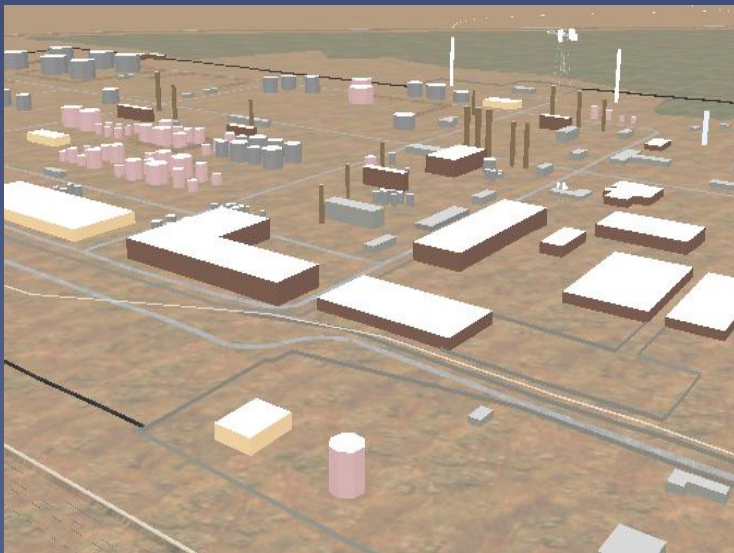
- Examples
  - MOUT ACTD
 - MMBL
  - Army Experimentation

NIMA Future M&S Role

- NIMA is the Executive Agent for terrain data
  - Provided support to DMSO via Terrain Modeling Project Office (TMPO)
  - Support included R&D and data production

- Liaison and contact with DMSO has diminished with time
  - NIMA aiming to re-energize the relationship
  - M&S community needs to help define requirements
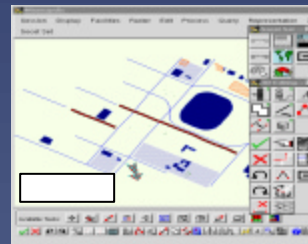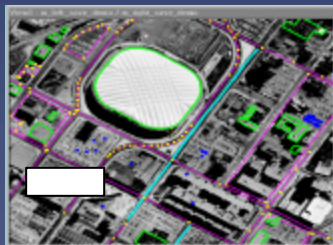
NIMA M&S Relevant R&D

- Volume Topology Definition and Development
  - FY98 DMSO funding continued by NIMA
  - Currently at the prototype stage

- Object Oriented Data Base / Stereo Workstation
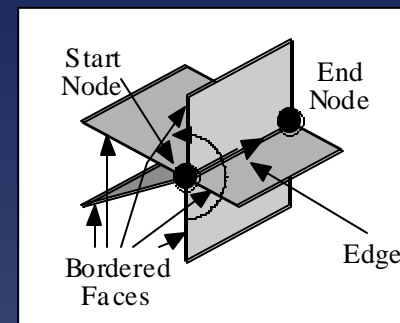
Minneapolis stereo pair

Corresponding Gothic dataset

- Spatial Object Transfer Format - NIMA 1998
  - Extending OGC Geography Markup Language
  - SOTF 'features', topological primitives. Node feature with its geometry, coordinates, and edge which is dependent upon that particular node. Edge feature with directed edges listed and the nodes upon which the edge is dependent
  - Possible mechanism for Volume Topology

Questions